



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/437,246 11/10/99 SHINADA

S 056708

MM91/0320
SUGHRUE MION ZINN MACPEAK SEA PLLC
2100 PENNSYLVANIA AVENUE N W
WASHINGTON DC 20037-3202

EXAMINER

NGHIEM, M

ART UNIT

PAPER NUMBER

2861

DATE MAILED:

03/20/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/437,246

Applicant(s)
Shinada et al.

Examiner
Michael Nghiem

Group Art Unit
2861



☒ Responsive to communication(s) filed on Jan 30, 2001

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-49 is/are pending in the application.

Of the above, claim(s) 43-45 is/are withdrawn from consideration.

☒ Claim(s) 27 and 29 is/are allowed.

☒ Claim(s) 1-26, 28, 30-42, and 46-49 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☒ The drawing(s) filed on Nov 10, 1999 is/are objected to by the Examiner.

☒ The proposed drawing correction, filed on Jan 30, 2001 is ☒ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 10

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 2861

DETAILED ACTION

The Amendment filed on January 30, 2001 has been acknowledged.

Drawings

1. The drawings are objected to because:
 - the lead line for reference number 8 (e.g. Fig. 1) is pointing to the wrong element.Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 2861

The claim lacks antecedent basis, "said channel of said valve body".

Claim Rejections - 35 USC 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

Claims 5-7, 10/5, 11/10/5, 12/11/10/5, 37/5, 38/5, 39/38/5, 40/39/38/5, and 42/38/5 are rejected under 35 U.S.C. 102(e) as being anticipated by Barinaga et al. (US 5,777,646).

Barinaga et al. discloses all the claimed features of the invention including:

- an ink cartridge (20) for a printing apparatus (Figs. 8, 11) providing ink to a print head through an ink supply needle (162) and removably attached to the print head (Fig. 10), comprising:

- an ink chamber (24) for containing ink;

- an ink supply port (28) for supplying ink from said ink chamber to the print head of the printing apparatus (Fig. 10), said ink supply port comprising an external opening (opening of 28);

- a packing member (104) provided in said ink supply port (Figs. 9, 10), forming an ink channel for allowing a flow of ink (Fig. 10), said packing member sealing the ink supply needle of

Art Unit: 2861

the printing apparatus by fitting therewith (Fig. 10), said packing member comprising a hole (slit of 104) and a protruding rim (rim of 104, Fig. 9) surrounding said hole; and

- a valve device (102) contained in said ink supply port elastically abutting against said protruding rim of said packing member (102 abuts rim of 104, Fig. 9), said valve device selectively opening and closing said ink channel in conjunction with the ink supply needle (Figs. 9, 10),

- said packing member comprises a first surface facing said ink chamber formed with a cylindrical recess (recess occupied by 102, Fig. 9) having a diameter acceptable to receive a part of said valve device at said first surface (Fig. 9),

- said hole of said packing member having a diameter smaller than said diameter of said cylindrical recess at said first surface (slit of 104 is smaller than recess),

- an elastic member (100) always urging said valve member toward said packing member (Fig. 9),

- said valve member comprises a support structure for supporting said elastic member (surface of 102 supporting 100, Fig. 2),

- said support structure is radially shaped (surface of 102),

- a packing retainer (106) for retaining said packing member at said external opening of said ink supply port (Fig. 9),

- said packing retainer comprises a film (thin flat layer of 106, Fig. 9) capable of being penetrated by the ink supply needle of the printing apparatus (Fig. 10),

Art Unit: 2861

- said film is formed with a hole (hole of 106) which enables the ink supply needle to easily pass through (Fig. 10),
- said packing retainer is a protruding portion (layer of 106 protrudes from 104, Fig. 9) protruding from said external opening toward the center thereof.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 8, 9, 10/1, 10/(1, 2, 4), 11/10/(1, 2, 4), (12, 13)/11/10/(1, 2, 4), 14-26, 28, 30-42, and 46-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barinaga et al. in view of De Visscher (US 3,777,771) and Main et al. (US 2,485,006).

Barinaga et al. further discloses the following claimed features of the invention:

Art Unit: 2861

- said valve device comes to close said ink channel of said packing member before the ink supply needle of the printing apparatus is completely detached from said packing member (when tip of 162 is between slit of 104, Fig. 9),
- said packing member is made of an elastic material (compliant septum 104, column 6, line 14),
- a sealing portion (bottom surface of 102, Fig. 2) for closing said ink channel of said packing member when said valve device contacts with said packing member (Fig. 9),
- said valve body of said valve device comprises a surface facing said packing member formed with a convex surface (surface of 102, Fig. 9).

However, Barinaga et al. does not disclose the following claimed features:

- said valve device does not comprise a sphere,
- a porous member accommodated in said ink chamber for absorbing ink;
- said valve device comprising a substantially flat surface with which the ink supply needle contacts,
- a guide body for guiding said valve body to slide substantially vertically with respect to said packing member,
- said valve member comprises a flange for supporting said elastic member,
- said packing member comprises a second surface facing said external opening with a tapered portion tapered from said external opening toward said ink chamber at said second surface, for guiding the ink supply needle of the printing apparatus,

Art Unit: 2861

- said packing member provided with a lubricant coat at least at an area with which the ink supply needle contacts,
- said valve body comprises an ink channel allowing ink to pass therethrough when said valve body is urged to come out of contact with said packing member by the ink supply needle of the printing apparatus,
- a part of said ink channel of said valve body is formed by cutting off said sealing portion,
- said guide body comprises:
 - an axial portion being connected to said valve body;
 - a guide block formed at an end of said axial portion opposite to said valve body, said guide block guiding said valve body to slide substantially vertically with respect to said packing member,
- said axial portion of said guide body is formed as one unit with said valve body,
- a guide unit provided in said ink supply port to receive said guide block of said guide body,
- said valve body and said guide body are separately formed and fixed to each other by fixing means,
- said guide body is made of an elastic material,
- said valve body of said valve device comprises a surface, facing said packing member, provided with a notch,
- said notch of said valve body has a tapered angle which is the same as that of the tapered ink supply needle,

Art Unit: 2861

- said spherical surface of said valve device has a diameter of curvature larger than a diameter of a widest part of said valve body,
- said hole is formed by cutting said film in a cross shape.

Nevertheless, De Visscher discloses a valve device (valve, Fig. 3) not comprising a sphere (Fig. 3), a guide body (72) for guiding a valve body (body of valve, Fig. 3) to slide substantially vertically with respect to a packing member (92, Figs. 2, 3), said valve member comprises a flange (surface supporting 82, Fig. 3) for supporting said elastic member (82), said packing member comprises a second surface (tapered surface of 92, Fig. 1) facing said external opening with a tapered portion tapered from said external opening toward said ink chamber at said second surface, for guiding an ink supply needle (13), said valve body comprises an ink channel (indicated by arrows, Fig. 3) allowing ink to pass therethrough when said valve body is urged to come out of contact with said packing member by the ink supply needle of the printing apparatus (Fig. 3), said guide body comprises an axial portion (72) being connected to said valve body (Figs. 1-3), and a guide block (opening of 52, Fig. 2) formed at an end of said axial portion opposite to said valve body, said guide block guiding said valve body to slide substantially vertically with respect to said packing member (Figs. 1-3), said axial portion of said guide body is formed as one unit with said valve body (Figs. 1, 2), a guide unit (opening of 62, Figs. 1-3) provided in said ink supply port to receive said guide block of said guide body (Figs. 2, 3), said valve body of said valve device comprises a surface, facing said packing member, provided with a notch (notch of valve member.

Art Unit: 2861

Fig. 3), said notch of said valve body has a tapered angle which is the same as that of the tapered ink supply needle (Fig. 3), for the purpose of joining two fluid containers, while

Main et al. discloses a valve device (6) comprising a substantially flat surface (Figs. 1, 2) with which the ink supply needle (plunger, Figs. 1, 2) contacts for the purpose of making fluid-tight coupling of two hollow body parts.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide Barinaga et al. with the valve devices as disclosed by De Visscher and Main et al. for the purposes of joining two fluid containers and hollow body parts.

The following limitations are well-known (MPEP 2144.03):

- an ink cartridge comprising a porous member accommodated in said ink chamber for absorbing ink and a valve device in the ink supply port;
- providing a lubricant coat between two contact surfaces to ease friction,
- a valve body (guide body) being made of an elastic material.

Even though Barinaga et al. as modified does not disclose said valve body and said guide body are separately formed and fixed to each other by fixing means, it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Art Unit: 2861

Furthermore, even though Barinaga et al. as modified does not disclose the claimed shape, it is noted that a modification involving a change in shape of a disclosed element merely involves routine skill in the art. MPEP 2144.04.

Finally, even though Barinaga et al. as modified does not disclose a part of said ink channel of said valve body is formed by cutting off said sealing portion, it has been held that determination of patentability of a product is based on the product itself and does not depend on its method of production. In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985).

Withdrawal of Allowability

5. The indicated allowability of claims 30-32 is withdrawn in view of the newly discovered reference(s) to De Visscher. Rejections based on the newly cited reference(s) are addressed above.

Allowable Subject Matter

6. Claims 27 and 29 are allowed.

Art Unit: 2861

Reasons For Allowance

7. The combination as claimed wherein said guide body is formed with a groove extending from said guide block through said axial portion, said surface, facing said packing member or said valve device is formed with a protruding portion to contact with a tip end of the ink supply needle is not disclosed or suggested by the prior arts of record.

Response to Arguments

8. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

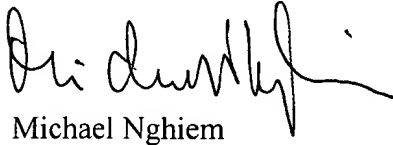
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ujita et al. (US 6,170,939) discloses an ink cartridge including a foam member and a valve device (Figs. 5, 6).

Application/Control Number:

Page 12

Art Unit: 2861

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Nghiem whose telephone number is (703) 306-3445. An inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist at (703) 308-0956.

A handwritten signature in black ink, appearing to read "Michael Nghiem", with a stylized flourish at the end.

Michael Nghiem

March 17, 2001